SUPPORT FOR THE AMENDMENT

This Amendment amends Claim 1; and adds new Claim 4. Support for the amendment is found in the specification and claims as originally filed. In particular, support for Claim 1 is found in Fig. 1. Support for new Claim 4 is found in Claim 1 and in the specification at least at page 20, lines 16-18. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-4 will be pending in this application. Claim 1 is independent.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

Applicants thank the Examiner for the courtesies extended to their representative during the June 23, 2005, personal interview.

As discussed in the personal interview, the present invention provides an aluminum alloy member covered with an anodized film that provides an improved combination of liquid corrosion resistance, gaseous corrosion resistance and plasma resistance. Specification at page 5, lines 15-23. These characteristics are provided by (i) first anodizing the aluminum alloy member and (ii) then hydrating the anodized surface of the aluminum alloy member to form (pseudo)boehmite. Specification at, e.g., page 9, lines 18-20; page 20, lines 16-18. Converting the anodized aluminum surface into (pseudo)boehmite increases the bonding strength of atoms constituting the anodized film, which makes the film harder and denser and leads to improved plasma resistance. Specification at page 11, lines 1-4.

The independent Claim 1 feature that "the film hardness (Hv) is no lower than 420" results in a significant improvement in plasma resistance. See specification at page 31, lines 4-7 and Table 3, reproduced below.

Table 3

No.	Hydration			Conversion of barrier layer into (pseudo)boehmite	Phosphoric acid-chromic acid immersion test	Chlorine gas corrosion resistance test (%)	Hydrochloric acid immersion test (min)	Film hardness (Hv)	Polishing test (μm/min)
	Method	Temperature (°C)	Duration (min)						
1	Immersion in hot water	75	23	O	9	5	290	450	4
2	Immersion in hot water	100	9	O	2	6	290	430	7
3	Immersion in hot water	None		×	155	<1	<1	480	2
4	Immersion in hot water	100	24	O	1	25	<1	390	10
5	Immersion in hot water	80	18	O	2	13	260	440	6
6	Immersion in hot water	75	16	O	130	<1	150	475	2
7	Immersion in hot water	75	33	O	1	12	270	435	6
8	Immersion in hot water	100	8	O	18	4	280	445	5
9	Immersion in hot water	100	10	O	1	8	280	420	7
10	Immersion in hot water	75	18	O	47	3	260	470	3
11	Immersion in hot water	75	43	O	1	18	130	430	7
12	Immersion in hot water	100	19	O	1	20	80	400	9
13	Immersion in hot water	100	6	O	122	2	20	460	4
14	Immersion in hot water	75	20	O	22	4	280	460	4
15	Immersion in hot water	75	26	O	5	9	280	440	6
16	Immersion in hot water	90	17	O	2	16	210	425	7
17	Immersion in hot water	80	32	O	1	17	200	425	7
18	Immersion in hot water	100	14	O	1	13	260	415	8
19	Immersion in hot water	100	7	O	90	3	270	450	5
20	Immersion in hot water	70	30	O	5	5	290	470	6
21	Steam under pressure	*	4	O	50	<1	280	470	3
22	Steam under pressure	**	2	×	20	<1	<1	455	4
23		None		×	165	10	<1	470	3
24	Immersion in hot water	85	8	O	90	14	260	465	3
25		85	10	O	55	30	180	455	4
26			6		125	2	15	460	5
27			8		110	5	260	455	6
28	Immersion in hot water	95	10	O	24	10	280	445	6
29			12		3	14	270	415	8
30			14		1	20	50	410	8
31	Immersion in hot water	75	23	O	9	18	150	470	3
32						14	260	470	3
33						<1	280	420	7
34						13	260	430	7
35						<1	290	425	7
36	Immersion in hot water	75	23	O	9	16	200	430	7
37						30	100	490	1
38						13	280	415	8
39						17	240	460	4
40						<1	400	410	8
41						<1	460	350	12
42	Immersion in hot water	70	25	O	7	<1	410	390	10
43						16	250	425	7

* at 120°C, 1.4 atm
** at 200°C, 3 atm

Table 3 shows that Examples 1-3, 5-11, 13-17, 19-28, 31-37, 39 and 43, which have film hardnesses of "no lower than 420", exhibit good plasma resistance (i.e., polishing test of no more than 7, see Specification at page 31, lines 4-8). In contrast, Comparative Examples 4, 12, 18, 29-30, 38 and 40-42, which have film hardnesses that are not "no lower than 420", exhibit poor plasma resistance (i.e., polishing test of more than 7).

Claims 1-3 are rejected under the judicially created doctrine of obviousness-type double patenting over Claims 1-4 of U.S. Patent No. 6,686,053 ("Wada"). Applicants respectfully traverse this rejection because Claims 1-4 of Wada are silent about and fail to suggest the independent Claim 1 limitation that "the film hardness (Hv) is no lower than 420". Furthermore, any *prima facie* case of obviousness based on Claims 1-4 of Wada is rebutted by the significant improvement in plasma resistance, discussed above, that is achieved by the present invention when "the film hardness (Hv) is no lower than 420". Thus, the obviousness-type double patenting rejection should be withdrawn.

Claim 1 is rejected under 35 U.S.C. § 102(b) over JP 2000-064092 ("Uko"). Uko discloses the structure:

surface layer denser than the inner layer
porous inner layer
aluminum alloy member

Uko's structure is formed by subjecting the aluminum alloy member to a "boehmite treatment and then to anodic oxidation treatment". Uko at abstract.

However, Uko is silent about the independent Claim 1 structure of

porous layer
non-porous barrier layer
aluminum alloy member

Uko fails to suggest the independent Claim 1 limitation of an "aluminum or aluminum alloy member having an anodized film formed thereon, wherein the anodized film comprises a porous layer and a **non-porous barrier layer *between* the porous layer and the member**". Thus, the rejection over Uko should be withdrawn.

Claims 1-3 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,027,629 ("Hisamoto") in view of Uko. Hisamoto discloses a vacuum chamber made of aluminum having a porous layer. Hisamoto discloses that after anodizing the aluminum to form the porous layer, non-porous type anodizing is conducted so as to grow a barrier layer. Hisamoto at Abstract.

However, the Office Action admits that "Hisamoto does not disclose that the barrier layer is at least partly boehmite or pseudo-boehmite". Office Action at page 4, lines 7-8.

As discussed above, Uko discloses a structure in which a porous inner layer is between an aluminum alloy member and a surface layer denser than the inner layer. Uko's structure is formed by subjecting the aluminum alloy member to a "boehmite treatment and then to anodic oxidation treatment". Uko at abstract.

In contrast, the present invention provides a structure in which a non-porous barrier layer is between an aluminum alloy member and a porous layer, the structure being formed by a process of anodizing and then hydrating to form (pseudo)boehmite,

There is no reasonable expectation that combining Uko's processing with Hisamoto would result in the independent Claim 1 structure of a non-porous barrier layer (at least partly boehmite or pseudo-boehmite) between an aluminum alloy member and a porous layer, when Uko discloses that the structure formed would be a porous inner layer between an aluminum alloy member and a surface layer denser than the inner layer.

Because there is no reasonable expectation of success, Hisamoto in view of Uko fails to establish a *prima facie* case of obviousness.

Any *prima facie* case of obviousness based on Hisamoto in view of Uko is rebutted by the significant improvement in plasma resistance, discussed above, that is achieved in accordance with the present invention over the independent Claim 1 range in which "the film hardness (Hv) is no lower than 420".

Because there is no reasonable expectation of success, and any *prima facie* case of obviousness based on Hisamoto in view of Uko is rebutted, the cited prior art fails to render obvious the claimed invention. Thus, the rejection over Hisamoto in view of Uko should be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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